

IN THE SPECIFICATION:

Please substitute the paragraph starting at page 3, line 6 and ending at line 12, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A2

--In consideration of the above-described problems, an object of the present invention is to provide an image pickup method and an image pickup apparatus capable of picking up an image with a broad substantial dynamic range without image shift, even with

video cameras or still video cameras which are likely to be subject to image shifts.--

Please substitute the paragraph starting at page 8, line 10 and ending at line 11, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A3

--Fig. 12 is a block diagram showing the specific structure of the VTR of the embodiment of Figs. 11A to 11C.--

Please substitute the paragraph starting at page 8, line 12 and ending at line 13 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

Alt
--Fig. 13 is a timing chart illustrating the operation of the VTR of the embodiment of Figs. 11A to 11C.--

Please substitute the paragraph starting at page 9, line 17, and ending at line 25 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

Alt
--The video signal output from the camera unit 100 is an analog signal which is supplied to the processing unit 200 and converted into a digital signal by an A/D converter 201. Pixel data of the converted digital signal is then converted by an operation (computing) circuit 202 in a manner to be described later. Thereafter, the converted pixel data is converted back into an analog signal by a D/A converter 203 and supplied to the recording unit 300.--

Please substitute the paragraph starting at page 11, line 8, and ending at line 13, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

Alt
--Next, the details of the operation of the image pickup element 103 will be described. Fig. 2 is a block diagram showing a more detailed structure of the camera unit 100, and Fig. 3 is a timing chart illustrating operation of the camera unit 100 assuming that NTSC signals are used.--

Please substitute the paragraph starting at page 12, line 3 and ending at line 12, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--In the example shown in Fig. 3, during the first blanking period, and during the next effective period, the 1/1000 sec. accumulation signal is output.

A1
Immediately after the 1/1000 sec. accumulation period, the substantial 1/60 sec. charge accumulation is performed, and during the next field effective period, the 1/60 sec. accumulation signal is output. In this manner, signals of different light amounts (1/1000 sec. and 1/60 sec.) are alternatively output for each field.--

Please substitute the paragraph starting at page 13, line 23, and ending at page 14, line 5, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A8
--As opposed to the above embodiment CCD, a CCD having a high speed shutter function of a VOD type has been recently used. This type drains unnecessary charges in the vertical direction of a CCD substrate, and can set the shutter speed very finely. If this CCD is used, the camera drive circuit 105 can set an optimum shutter speed which is judged by the AE control circuit 20 of the control circuit 108 in accordance with a brightness difference between a main object and a background object.--

Please substitute the paragraph starting at page 15, line 1 and ending at line 12, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Since the memory image is formed by a signal delayed by one field, the "crushed white" and "crushed black" are formed in fields different from those of the through images. Therefore, if the through and memory images are properly combined, an image of good quality without the "crushed white" and "crushed black" can be obtained. A9 Namely, signals of the through and memory images are compared with predetermined threshold values at each field to discriminate between the "crushed white" and "crushed black" of each pixel, by setting "1" if the signal of each pixel is larger than the threshold value, and "0" if smaller.--

Please substitute the paragraph starting at page 15, line 13 and ending at line 25, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Figs. 6A and 6B show the relation between threshold values, pixel brightness levels, and fields. The abscissa of Fig. 6A indicates the brightness level, and the ordinate indicates an occurrence frequency of each brightness level in one frame. As A10
cont shown in Fig. 6A, a first threshold value Th1 is set so that the "crushed black" can be discriminated, whereas a second threshold value Th2 is set so that the "crushed white" can

A-10
be discriminated. That is, a brightness level equal to or lower than the first threshold value Th1 is judged as the "crushed black", whereas a brightness level equal to or higher than the second threshold value Th2 is judged as the as "crushed white".--

Please substitute the paragraph starting at page 19, line 12 and ending at line 16, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A-11
--Arrows (a) to (d) shown in Fig. 9 correspond to signals (a) to (d) shown in Fig. 8. The image pickup device 103 capable of performing the above operation may be a MOS solid image pickup device of an XY addressing type.--

Please substitute the paragraph starting at page 20, line 10 and ending at line 16, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A-12
--A switch 46 changes its contact point alternately at each field to alternately apply the AE control signal of the AE control signal generator 43 and the AE control signal held by the control signal holding circuit, to the iris drive circuit 106. A switch signal generator 47 controls the switching of the switches 45 and 46 which are synchronously switched.--

Please substitute the paragraph starting at page 20, line 17 and ending at line 23, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A13
--In the above example, clock generators for generating high and low speed clock pulses are provided, and the high and low speed clock pulses are switched in response to a signal of the switch signal generator output at each field. Accordingly, the circuit structure and operation can be simplified, which is particularly suitable for moving images.--

Please substitute the paragraph starting at page 23, line 15 and ending at line 18, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A14
--The video signal of the common area shown in Fig. 11A is output from the first field memory 204a and converted into a signal of the original type (e.g., NTSC signal), same as the input signal.--

Please substitute the paragraph starting at page 24, line 3 and ending at line 12, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A15

--The addition signal is supplied via the terminal A of the selector 202c and via the EVEN terminal of another selector 209 to the D/A converter 203. The addition signal is also supplied via the terminal A of the selector 202c to the second field memory 204b. During the next odd field, new odd field information is stored in the second field memory 204b while the same video signal is supplied to the D/A converter 203 via the ODD terminal of the selector 209 through a read-modify-write operation.--

Please substitute the paragraph starting at page 24, line 13 and ending at line 17 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A16

--A switch 208 is open for the odd field and closed for the even field. While the new odd field information is written in the second field memory, the adder 202b is made through by connecting to the terminal E.--

Please substitute the paragraph starting at page 24, line 18 and ending at page 25, line 6, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A17

--The terminal A of the selector 202c is supplied with the addition signal, the terminal O is supplied with the odd field information output from the second field memory 204b, and the terminal E is supplied with the even field information. If the

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selection signal from the motion vector comparison circuit 207 indicates that a pixel has a motion caused by hand vibration, the addition signal is selected, whereas if the selection signal indicates that a pixel has a motion other than by hand vibration, a video signal of either the even or odd field having a proper exposure is selected. The selected signal is supplied to the next stage selector 209 and second field memory 204b. A video signal generated in the above manner is output from the D/A converter 203 in the form of an analog signal, same as the original input signal.--

Please substitute the paragraph starting at page 26, line 1 and ending at line 7, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A18

--A signal indicated at D shows a switching timing of the selector 209 . Image information synthesized from the odd field image information during a period t1 and the even field image information during a period t2 is output during a period t2, and the same synthesized image information is again read and output during a period t3.--

Please substitute the paragraph starting at page 26, line 8 and ending at line 15, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A19
--In synthesizing an image, if it is judged that a pixel has a motion other than by hand vibration, a video signal of either the even or odd field having a proper exposure is selected, as a time axis shift of the image may be feared. However, this does not pose any practical problem, as described with an example of a calculation process for a synthesized image shown in Fig. 4.--

Please substitute the paragraph starting at page 26, line 16 and ending at line 23, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A20
--As described previously, in this embodiment, each process is performed in the unit of two fields. A line interpolation process may be interchanged between the odd and even fields to make it compatible with interlacing and reduce so-called field interference. In order to reduce this field interference, a line interpolation circuit is inserted at a point Q between the second field memory 204b and selector 209.--

Please substitute the paragraph starting at page 27, line 11 and ending at line 16, with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

A21
--In this case, the software program codes themselves realize the embodiment functions. Therefore, the program codes themselves and means for supplying